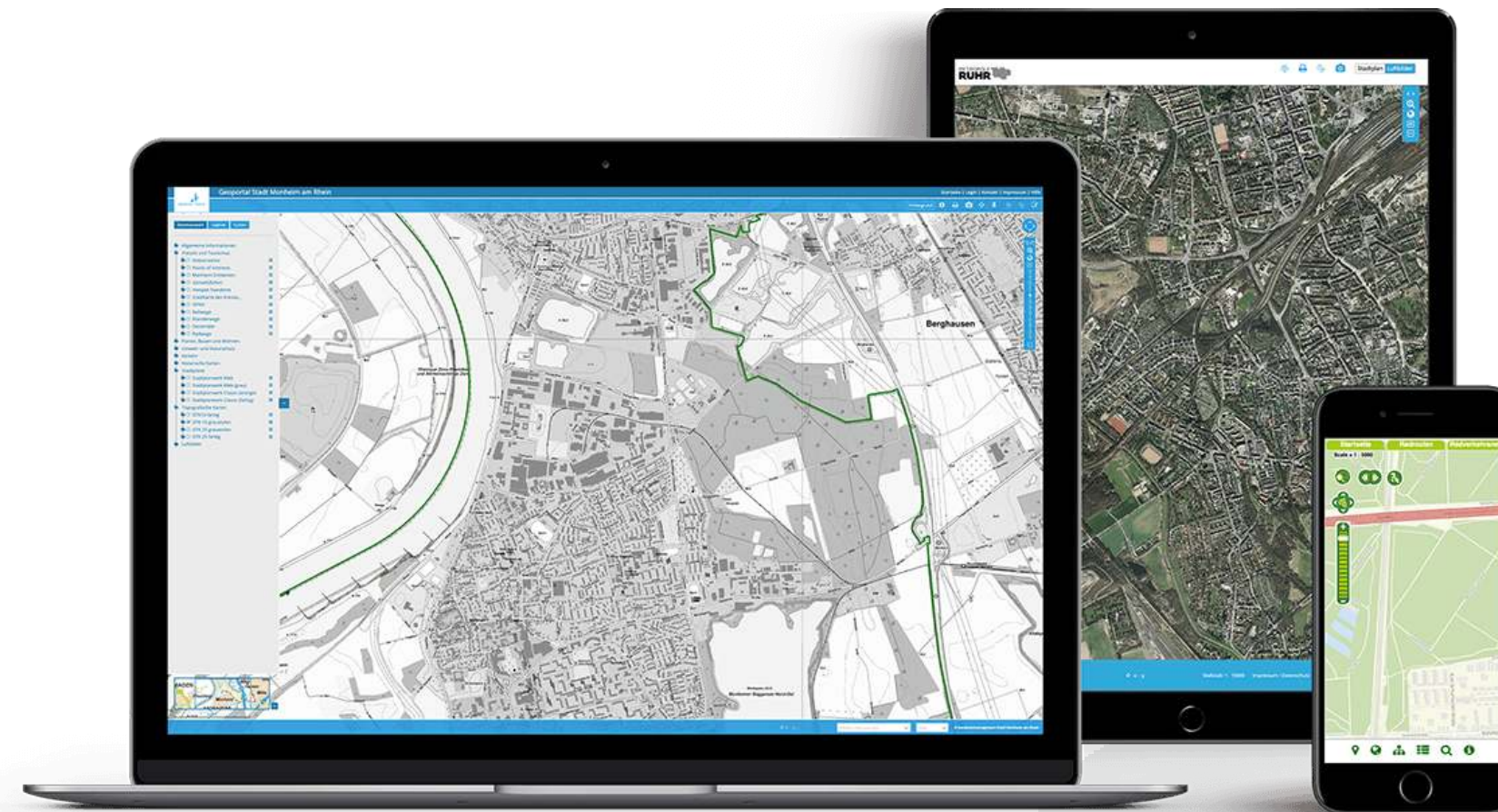


Learn how to create Web Applications with Mapbender

Astrid Emde (WhereGroup) | [FOSS4G Europe 2025 Mostar Bosnia Herzegovina](https://talks.osgeo.org/foss4g-europe-2025-workshops/talk/TDJMFR/)



FOSS4G Europe 2025 Slides: <https://talks.osgeo.org/foss4g-europe-2025-workshops/talk/TDJMFR/>

Astrid Emde

WhereGroup Bonn since 2002

focus on WebGIS & Webmapping consultancy &
trainer at FOSS-Academy

PostgreSQL/PostGIS, MapServer, GeoServer, QGIS,
QGIS Server, Mapbender, PostNAS-Suite

OSGeo Board, FOSSGIS e.V., Mapbender PSC,
OSGeoLive PSC, QGIS-DE

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> 50 employees

developers, consultants & geospatial experts

Bonn – Berlin - Freiburg - Hamburg

Open Source Software Solutions since > 15 years

Company behind Mapbender, MapComponents & Mops

FOSS Academy - WhereGroup Training Institute

FOSSGIS e.V. member & OSGeo sponsor

<https://wherogroup.com>

<https://foss-academy.com>



Mapbender

Easy to configure!

- WebGIS Client Suite with administration web interface
- Create a geoportal without writing a single line of code!
- Any number of applications with only one installation
- Create and maintain an OWS repository
- Distribute configured services among applications
- Grant users and groups access to applications and services
- Supports several languages and you can support your language
- <https://mapbender.org/en/about-mapbender/>



Mapbender

- OSGeo project since 2006
- MIT License
- Code on GitHub



Olaf Knopp
Mapbender Chair

Geschäftsführer der WhereGroup und Mapbender-Projektleiter. Entscheidend bei der grundlegenden konzeptionellen Ausrichtung der Software und dem Zusammenhalt des Teams.



Astrid Emde
Mitglied des PSC

Technische Leitung des Projekts. Absolute Mapbender-Expertin. Hat schon zahlreiche Projekte mit Mapbender umgesetzt, Workshops und Schulungen gehalten. Qualitätssicherung, Dokumentation, Testing und OSGeoLive.



Thorsten Hack
Mitglied des PSC

Technischer Kopf mit viel Leidenschaft und Spaß an den Details.



Frederik Häfker
Mitglied des PSC

Spezialist für Mapbender im realen Einsatz - seine Schwerpunkte sind die Integration in bestehende Systeme und Workflows rund um die Software.



Jörg Thomsen
Mitglied des PSC

Als Berater und Trainer seit vielen Jahren am Aufbau und der Konfiguration von zahlreichen Anwendungen maßgeblich beteiligt.



Mapbender

The Architecture

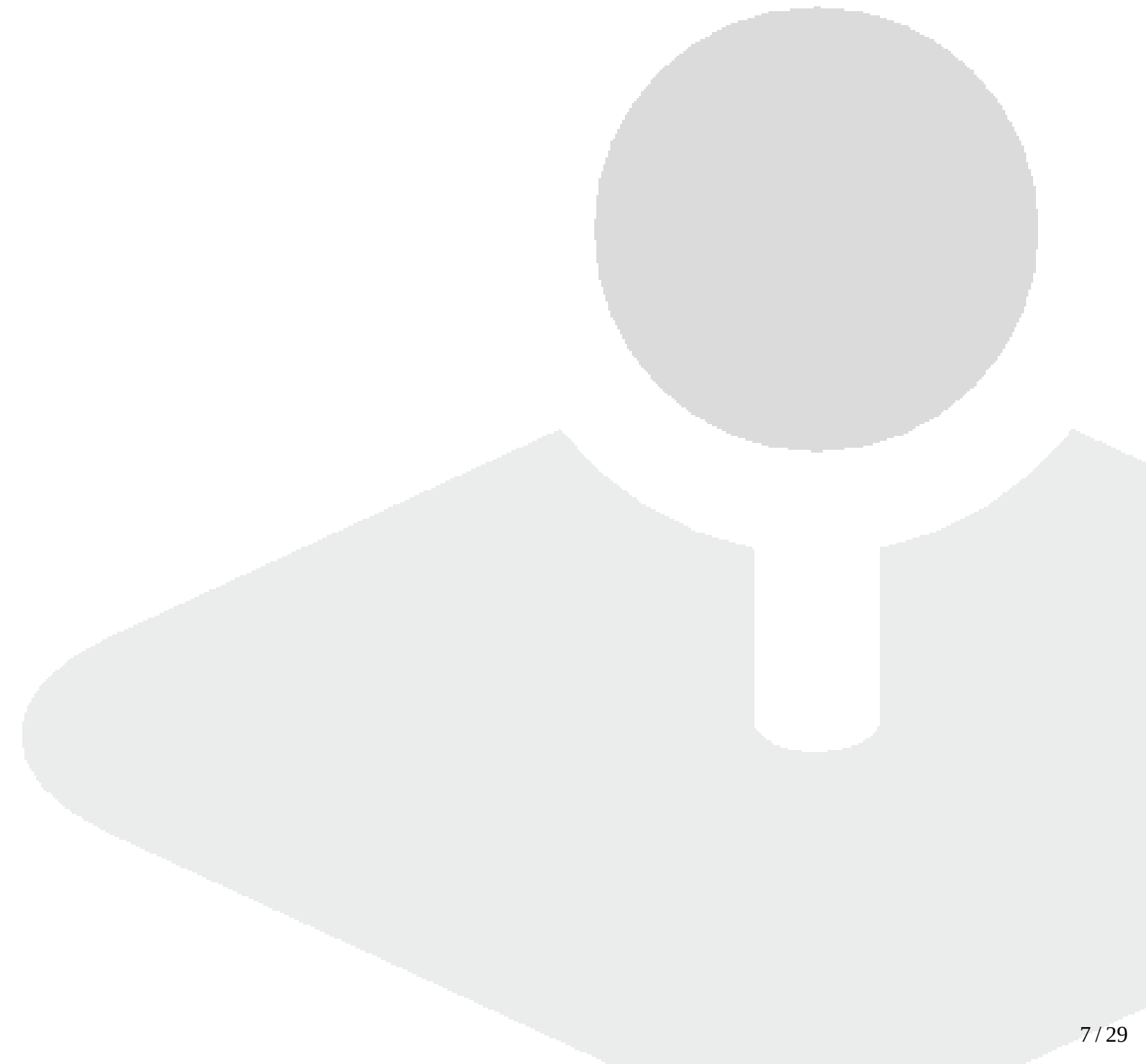
- PHP Framework Symfony
- HTML
- Bootstrap
- OpenLayers as map client
- YAML configuration



Mapbender

Requirements for your installation

- Running on your server
- Needs a WebServer like Apache HTTP Server or NGINX
- Needs PHP
- Database for administration i.e. SQLite or PostgreSQL



Mapbender Functionality

Offers many features that you can combine.

- Offers elements to visualize, create and edit data.
- Search & print functionality & much more
- <https://mapbender.org/en/features/>

Mapbender Gallery

Get inspired

- <https://mapbender.org/en/showcase/>



Mapbender

Applications

Offers template applications

- Template applications demonstrate the functionality
- Create a copy & build your own application
- <https://demo.mapbender.org/>

Mapbender 4.1.3

24. June 2025

- <https://github.com/mapbender/mapbender-starter/blob/master/CHANGELOG.md>
- <https://mapbender.org/aktuelles/details/mapbender-version-410-released/>
- <https://mapbender.org/aktuelles/details/mapbender-version-400-released/>

Mapbender

Important Links

- Mapbender Website <https://mapbender.org>
- Mapbender Funktionalität <https://mapbender.org/funktionen/>
- Mapbender Dokumentation <https://doc.mapbender.org>
- Mapbender Project on Github <https://github.com/mapbender/>
- Mapbender-Starter on Github <https://github.com/mapbender/mapbender-starter/>
- Mapbender Workshop-Repository <https://github.com/mapbender/mapbender-workshop/>
- OSGeoLive <https://live.osgeo.org>
- Mapbender on OSGeoLive https://live.osgeo.org/de/quickstart/mapbender_quickstart.html

What we will learn

- Get to know Mapbender
- Add Services to Mapbender
- Create your own application
- Get to know Mapbender functionality
- Learn about Roles and permission handling

Open the Mapbender Landing page & login

- <https://schulung.foss.academy/mapbender/>
- Login via: root / root
- Explore Applications

Publish WMS in Mapbender

- Menu → Sources → + Add Source
- OGC WMS: Load GetCapabilities Url

Load WMS in Mapbender

- FOSS4G WMS <https://wms.wherogroup.com/cgi-bin/foss4g.xml?SERVICE=WMS&VERSION=1.3.0&REQUEST=getCapabilities>
- OSM by WhereGroup <http://osm-demo.wherogroup.com/service?REQUEST=GetCapabilities&Service=WMS&Version=1.3.0>
- TopPlus Open https://sgx.geodatenzentrum.de/wms_topplus_open?request=GetCapabilities&service=wms
- WMS Mundialis <https://ows.mundialis.de/services/service?Service=WMS&Version=1.3.0&REQUEST=getCapabilities>
- WMS IGME5000 Geological Map <https://services.bgr.de/wms/geologie/igme5000/?REQUEST=GetCapabilities&VERSION=1.3.0&SERVICE=WMS>

Create a new Application in Mapbender

- Your application should start with the extent of Mostar
- Copy Application mapbender_user and rename it to FOSS4G
- Switch to Layout → map-Element and set SRS EPSG:4326
- Modify MAX EXTENT to the whole world
lower left -180 -90
upper right 180 90
- Modify Start Extent Mostar
lower left 17.7608 43.3111
upper right 17.8750 43.3767
- Modify the scales to:
100000000,50000000,10000000,5000000,1000000,500000,100000,50000,25000,10000,7500,5000,2500,1000,500
- Add other EPSG: EPSG:10326, EPSG:10327, EPSG:10328, EPSG:10329
- Check for EPSG-Codes for BH <https://epsg.io/?q=Bosnia+and+Herzegovina>

Add Services to your application

- Your application should show some OGC WMS
- Go to Tab Layerset
- Add WMS via +
- Create a new Layerset via "big" + and add Services to the new layerset
- Go to Layout to the **map** Element and activate your new Layerset and move it to the right position
- Go to the Layout to element Layertree and open the folder for you new Layerset
- Have a look at your application. The new Layerset should show up

Modify your application Layout

Change and add elements

- Learn about Mapbender Elements <https://doc.mapbender.org/en/elements.html>
- Disable elements you do not want to provide
- Change the visibility for desktop and mobile use
- Change the behaviour of the sidepane
- Change the size of the element **Overview**

Modify your application Layout

Change and add elements

- Add more functionality
- Add a new element **Link** and refer to the FOSS4G website <https://2025.europe.foss4g.org> - see <https://doc.mapbender.org/en/elements/misc/link.html>
- Add a new element **HTML** to the toolbar that shows the application name - see <https://doc.mapbender.org/en/elements/misc/html.html>
- Add a new element **HTML** to the sidepane and write an Impressum where you add the Link <https://2025.europe.foss4g.org> and refer to the image <https://2025.europe.foss4g.org/images/logo1.png>

Modify your application Layout

Change and add elements

- Change the behaviour of the element **Layertree** - see <https://doc.mapbender.org/en/elements/basic/layertree.html>
- Change the behaviour of the element **Navigation Toolbar** - see https://doc.mapbender.org/en/elements/basic/navigation_toolbar.html

Mapbender PDF Print

Change and add elements

- Change the element **Print** - see <https://doc.mapbender.org/en/elements/export/printclient.html>
- Add scales, change the file prefix to foss4g
- Add a new PDF template **a4portrait_foss4g** (the template was prepared for FOSS4G and is on the server)

Mapbender Design

Overwrite images and css

- Modifications in parameters.yaml - logo, name, splashscreen, login image
- Overwrite favicon mapbender/application/public/
- See css Editor in your application

```
.toolBarColors, .toolBar {  
  color: #305d55;  
}
```

User and Access Management

Create User and Groups

- Go to Security
- Users → + Add new user - add two new users
- Group → + Add new group - add a group
- Group → add your first user to your new group

User and Access Management

Provide access to your application

- Go to your application to Security
- Grant view access to your new group
- Go to the Layout section and grant access to the Routing element only to your second user

Search

Search on your data in PostgreSQL

- Copy the searchRouter configuration from https://schulung.foss.academy/mapbender/application/mapbender_digitize_demo_foss4g to your application
- Have a look at the configuration
- https://doc.mapbender.org/en/elements/search/search_router.html

Digitizer

Create/Modify data via Mapbender

- Copy the digitizer configuration from https://schulung.foss.academy/mapbender/application/mapbender_digitize_demo_foss4g to your application
- Have a look at the configuration
- Create some new features
- Print via digitizer using your a4portait_foss4g template
- https://doc.mapbender.org/en/elements/editing/digitizer/digitizer_configuration.html

What is coming next?

More things to discover

- Join the mailing list
- Try out more elements
- Translate Mapbender to your language
- Try QGIS2Mapbender to publish WMS directly from QGIS
- Join the Community Sprint at FOSS4G Europe on Saturday 19. July and get involved.
- Reach out to me for more information

Thank you

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[Enjoy the conference!](#)

FOSS4G Europe 2025 Slides: <https://talks.osgeo.org/foss4g-europe-2025-workshops/talk/TDJMFR/>

